INDEX OF SURGICAL PROGRESS.

ABDOMEN.

I. The Surgical Treatment of Perforating Ulceration of the Stomach and Intestine. By DR. STEINTHAL (Heidelberg, Stuttgart.) Three cases of peritonitis due to perforation occurring during the past 2 years in the clinic of Czerny in Heidelberg have caused an inquiry into the results of other operators in similar cases. In addition to the above there are 18 recorded cases of operation for perforating ulceration of the intestine or stomach. Eight cases recovered. In five of these there was circumscribed encapsulated peritonitis. In one case intestinal suture was resorted to. In still another the vermiform appendix which was free in a hernial sac was resected. In the remaining three cases incision with drainage was resorted to as in an abscess, to a certain extent anticipating the mode of spontaneous recovery. In three additional cases (cured) we find two of Mikulicz and Krönlein in which diffuse purulent peritonitis already existed. The third case has recently been reported by Lücke; here there was acute suppurative peritonitis following a small perforation. In the 10 unsuccessful cases the operation was resorted to too late, or the perforation was not found or collapse set in, in which case, as in Krönlein's, an autopsy not having been permitted, the cause remained obscure.

It is very important, however, to note the fact that in no case was the operation harmful or the cause *per se* of a beginning general peritonitis in cases where this process had previously been circumscribed. We are justified, inasmuch as the operation is still a new one and we are in the beginning of its study, to hope that future experience will secure better results. It is very important in a prognostic sense to diagnose perforative peritonitis, as early as possible and to fix in advance the point of perforation. The diagnosis of peritonitis due to

perforation is aided by the history (previous stomach symptoms, typhus ambulatorius, typhlitis) the sudden onset of the peritonitis, a collection of free gas in the peritoneal cavity (tympanites, diffuse sonorous percussion, with metallic timbre, absence of hepatic dulness.) The following aid as to the seat of perforation. Absence of odor in the gas on opening the peritoneum with comparatively slight septic properties points to stomach perforation. The ileum and colon allow an odoriferous gas of rapid septic acting qualities to escape. With the jejunum we have a slight escape of contents and gradual onset of symptoms (Czerny.) On the other hand a rapid disappearance of liver dulness and marked meteorism speak for perforation of the stomach. Added to this we also have circumscribed dulness and local tenderness.

Three cases occurring in the Heidelberg Clinic illustrated the above. 1. Servant, æt. 20, female, has recently suffered pains in the stomach; five days previous to admission severe pain in the left epigastrium; next day abdomen swollen, dyspnœa; since then general condition very bad; no vomiting, no movement from bowels; on admission abdomen much distended, very sensitive; diffuse tympanitic resonance with the hammer and pleximeter, a metallic ring on the left side, liver dulness absent, slight dulness in both lumbar regions. Diagnosis, tympanites on account of perforation. Laparotomy in linea alba; on opening the peritoneum an odorless gas escaped, slight peritonitis on the anterior aspect of the smaller curvature of the stomach, intense injection of the serosa and recent pseudo-membrane (fibrinous), perforation not found, death after four days. Postmortem: ulcerating perforation on the anterior stomach wall, circumscribed subphrenic peritonitis which subsequently became general.

2. Waiter, æt. 33. Some time past suffered once with stomach trouble. Three days before admission after a rapid movement, sudden pain occurred a hand's breadth to right of umbilicus and a subjective feeling of something having fallen into the abdomen. Since then he has experienced constant vomiting, no movement from bowels, no passage of gas. Abdomen in epigastrium and hypochondrium strongly inflated, diffuse tenderness especially on the right; diffuse tympanitic resonance;

in both lumbar regions dulness which on the right extends a hand-breadth over Poupart's ligament as far as the midline and which does not disappear by change of position; absence of liver dulness. Diagnosis. Collection of gas in peritoneum caused by perforation of stomach or cæcum. On opening the peritoneum in the linea alba gas escaped with strong odor. A pericæcal collection of pus corresponds to dulness over the right Poupart's ligament but no perforation. The latter found on the pyloric end of the stomach. Continuous suture. Death at night. Autopsy. Diffuse fibrinous peritonitis, perforation of an old ulcer of the stomach with circumscribed peritonitis at this spot.

3. Male, æt. 52, awakened one morning with severe pain in the ileo-cæcal region. Rest, icebag, diet. On the next day sudden severe pain in the ileo-cæcal region and collapse. The abdomen previously soft began to distend gradually; dulness of the left lobe of liver gradually disappeared. Ileo-cæcal region shows dulness and resistance—a circumscribed dulness size of a silver dollar. Diagnosis. Acute typhlitis, circumscribed perforative peritonitis which has suddenly become general. Laparotomy over the ileo-cæcal region; no marked escape of gas; resection of the perforated necrotic vermiform appendix. Continued improvement in the first 3 days. Fifth day distended abdomen, restlessness, nausea, vomiting, gradual collapse; death on morning of the sixth day. Autopsy. Peritoneum in comparatively good condition; the peritoneal surface of the vermiform process covered with fibrin and pus. Small intestine markedly distended and contains much fluid.

In the first case the seat of perforation could be fixed by the history (previous stomach symptoms) the escape of odorless gas on opening the peritoneum, the comparatively slight peritonitis and the injection and pseudo-membrane on the anterior surface of the stomach. In the second case the diagnosis lay between stomach and cæcal perforation. The history of previous stomach trouble and the localized pain to the right of the umbilicus spoke for the first with the rapid tympanites and the absence of liver dulness. For the latter diagnosis we have the fixed dulness over the right Poupart's ligament, and the apparently advanced peritonitis. The diagnosis in the third case was simple. The

fatal termination of the first case was caused by a failure to find the perforation. In the second case the patient was much collapsed before operation. In the third case the injection of the peritoneum was too intense or the disinfection insufficient; against which we have the continued improvement for three days; or perhaps the after-treatment was faulty, inasmuch as the patient was very restless, drank very much, and had no passage either of feces or gas in spite of an inserted rectal tube. Minim doses of opium, restricted diet and occasional use of the stomach pump were perhaps here indicated.

As to the technique of the operation it is to be remarked: In slight circumscribed peritonitis due to perforation, incision, emptying of contents after manner of Schroeder and Escher with closure of perforation by suture should be resorted to. We should avoid too much manipulation. Failing to find the perforation and in general peritonitis the abdomen should be laid open by a liberal incision. In a perforation previously diagnosed we may make an incision somewhat to the side for the cæcum. For the stomach and duodenum an incision in the linea alba from the umbilicus upwards. The peritoneum is next opened by a very small incision in order to decide the character of the escaping gas. The operation is further carried out in the manner familiar in intestinal surgery and laparotomy. Finally the peritoneum is irrigated with $^1/_6\%$ salicylic acid until the fluid returns clear and the loops of intestine most strongly infected are sponged off with 0.5% sublimate. The Gersung's iodoform wick is recommended for drainage.

Discussion.—DR. LAUENSTEIN thinks an actual cleansing of the peritoneum in perforating peritonitis is impossible and dangerous, inasmuch as the bacterial fibrin layer must not be rubbed off the intestine mechanically. On operating again he would fill the abdomen with an antiseptic fluid (salicylic solution) then reverse the patient and allow it to flow out and repeat this several times.

DR. FRANK (Berlin) mentioned two cases of Hahn operated for perforating typhoid ulcers, both being fatal; yet he approves of the operation inasmuch as the patient being under the observation of the physician the early diagnosis can be made and the place of perforation fixed.

DR. POLCHON (Danzig) thinks that recovery is only possible when the patient is operated 2 or 3 hours after perforation. In cases of his own he has found the serosa so invaded with bacteria that a thorough disinfection would scarcely be possible. We should try to localize the process with opium. If on laparotomy we find the pus only on the intestinal surface the prognosis is favorable. But if the pus is diffused between the coils of intestine a further surgical interference is useless.

DR. TILMANNS (Leipzig) had successfully operated upon an old encapsulated abscess which originated through a perforation of the stomach.

DR. SONNENBERG (Berlin) recommends in cases of suspected abscess after perforation of the vermiform appendix, incision of the abdomen as far as the peritoneum. An abscess present can easily be found.

DR. WAGNER (Konigshütte) operated upon a man with perforation of a duodenal ulcer after lifting a heavy weight. The diagnosis was rupture of the bladder. The point of perforation was found on autopsy only. The opening of an abscess between the intestines is most difficult. In one case he had opened 12 abscesses and post-mortem had found one still existing.—*Beilage zum Centralbl. f. Chir.*, No. 24, 1888.

HENRY KOPLIK (New York).

II. Penetrating Stab-Wound of Abdomen with Prolapsus of Omentum and Bowel. By Dr. ALEXIS S. VVEDENSKY (Moscow, Russia).—Dr. Vvedensky, house-surgeon to the Marünskaia Infirmary in Moscow, reports two cases ending in recovery. I. A strong and healthy shoemaker's boy, æt. 11, fell down, a cobbler's knife penetrating from his right trousers' pocket into the abdomen. He drew it out at once, and noticed that "a bit of fat was protruding from his belly." For fear of punishment the boy said nothing to anybody until his mates happened to observe bloody stains on his shirt and sent him to the hospital. On examination, about 24 hours after the accident, a transverse wound, 1 cm. long, was found, situated 2 fingers' breadth below the right costal border; a conical piece of